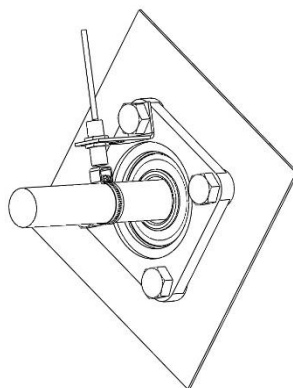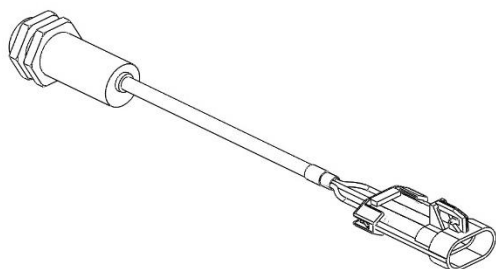# DIGI★STAR

PRECISELY

Rotation Counter Installation Manual
For EZ/TMR xx10 Series Indicators

DIGI★STAR

Ft. Atkinson, Wisconsin USA

DIGI★STAR

Panningen, The Netherlands
www.digi-star.com

DIGI★STAR

INTRODUCTION

Thank you for equipping your Digi-Star Scale System with the Rotation Counter feature. The Rotation Counter

Sensor allows the scale Indicator to both; count the number of revolutions of the PTO shaft, and track when the

PTO is on. This in turn allows the scale Indicator to utilize the Rotation Counter function, record Hours of Use,

and properly display a Maintenance Message.

See your EZ/TMR Indicator Operators Manual for more information on how to utilize these functions.

This installation manual will guide you through the steps necessary to install the Rotation Counter Sensor and

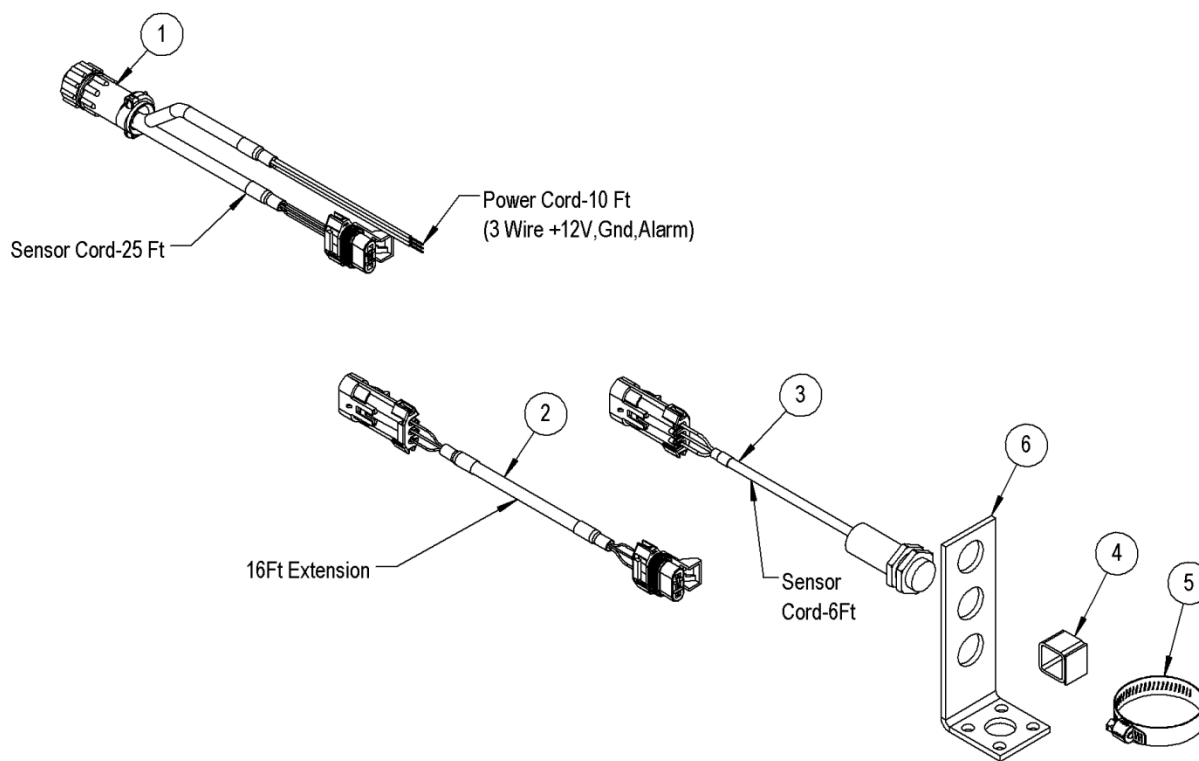Cabling for the Rotation Counter feature.

D4044-EN Rotation Counter Installation Manual Rev B LBW

POWER CABLE & ROTATION COUNTER KIT-410002

Item No.	Item Description	Qty.	Part #
1	Cable-RPM Sensor/Alarm Out "Y"	1	408845
2	Cable-Prox Sensor 16 Foot	1	407200
3	Sensor-RPM w/Conn 6 Foot	1	407199
4	Target-RPM w/ Adhesive	1	407419
5	Hose Clamp #24 SS	1	407451
6	Bracket-RPM Sensor AutoLog	1	407452

FIGURE 1: Hardware Diagram

INSTALLATION INSTRUCTIONS

The Rotation Counter Sensor can be installed on any shaft or sprocket that is directly coupled to the mixer's primary mixing rotor or auger.

If the mixer is equipped with a transmission or gearbox that provides a neutral or de-coupled setting the Rotation Counter must be installed downstream on the mixing rotor or auger side of the transmission or gearbox.

The Rotation Counter can also be installed to directly sense the rotations of the primary mixing rotor or auger if accessible.

To install on a PTO Input Shaft:

1. Clean PTO shaft with wire brush where applying target and wipe down with cleaning agent.

2. Peel off adhesive backing on target.

3. Attach target, adhesive side down, securely to PTO shaft with hose clamp as shown in Figure 2. Place hose clamp screw head inside target as shown in Figures 3.
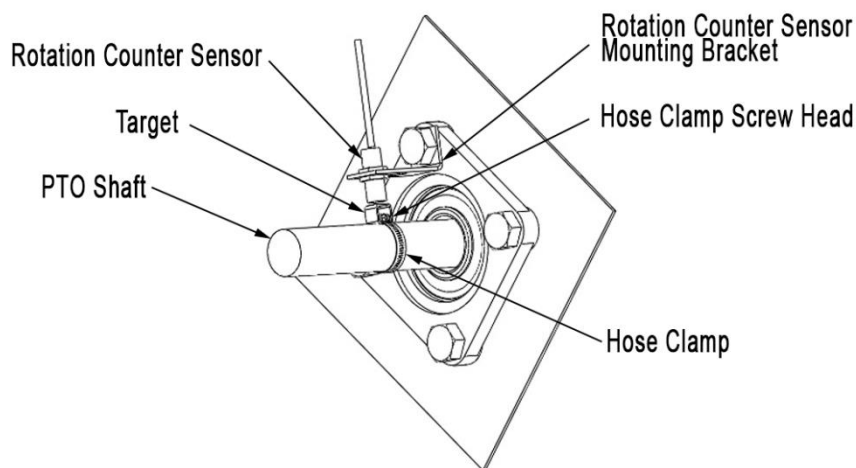

Figure 2: Target Installation

⚠WARNING The installation diagrams show safety shields removed in order to show additional details.   Never operate equipment without safety shields in place. Adding the target to a rotating shaft may require additional shielding and is not provided. Consult your original equipment manufacturer.

4. Attach Rotation Counter Sensor Mounting Bracket as shown in Figure 2.

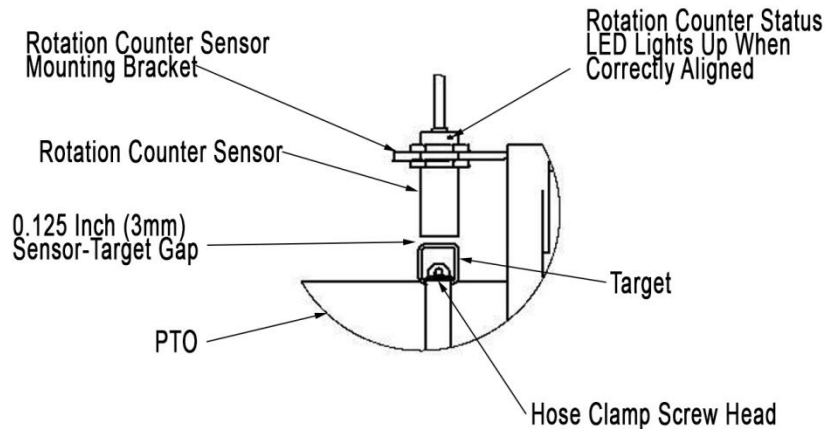5. Adjust sensor to 1/8" (3mm) from target as shown in Figure 3.

Figure 3: Rotation Counter Sensor Adjustment

6. Connect the "Y" Cable as shown in Figure 1.

7. Connect the Indicator Power and Rotation Counter "Y" Cable to 12VDC power source as shown in Figure 4. The power source should be protected with a 10 amp fuse.

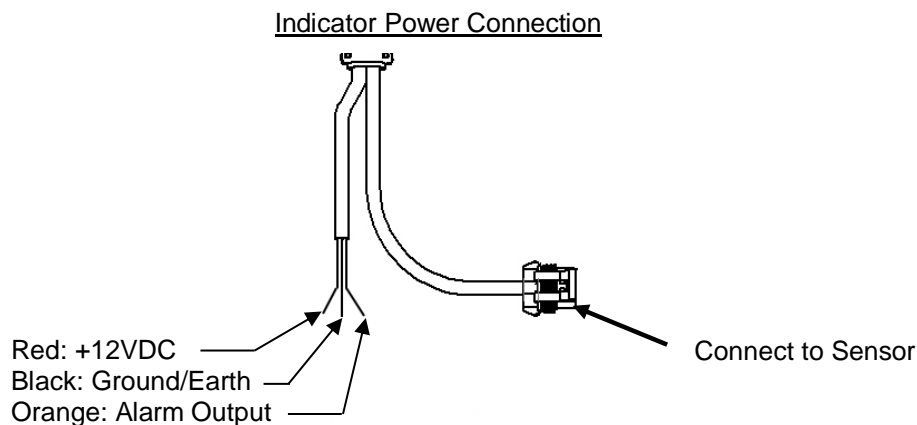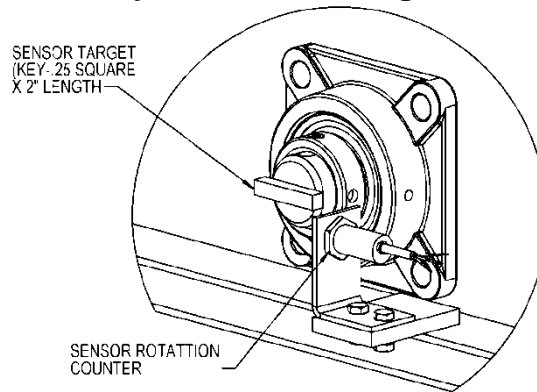8. Connect the power lead to the J901 Power Connector on the bottom of the Indicator.

Figure 4: Rotation Counter Sensor "Y" Cable Power Connection

Alternate installation directly on a rotor or auger shaft

SENSOR TARGET
(KEY-.25 SQUARE
X 2" LENGTH

SENSOR ROTATTION
COUNTER

INSTALLATION #3: MIXER FRONT BEARING SUPPORT

Alternate installation on a jack shaft

P/N 403018
CABLE TIE

P/N 403017
STEEL SENSOR
TARGET

M XFR INPUT
DRIVE SHAFT

.125" MAXIMUM
GAP

P/N 403011
SENSOR ROTATION
COUNTER

P/N 403014
BRACKET SENSOR
(MOUNTING SCREWS
1/4 OR 5/16" DIAMETER)

Alternate installation on drive or drive sprocket
Installing the sensor to pick up the teeth on drive or driven sprockets is also possible.

INDICATOR SETUP INSTRUCTIONS
To turn on Rotation Counter function on Digi-Star EZ/TMR xx10-Series Indicators
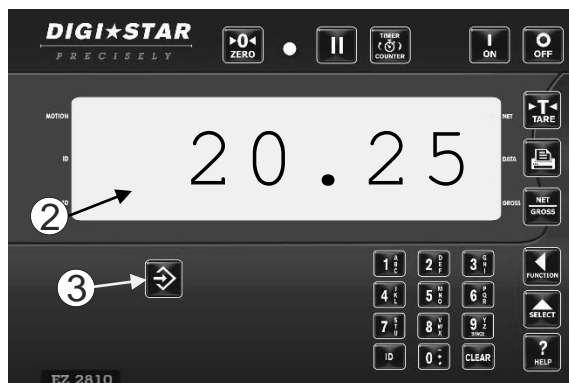
1. Enter **4301** press [SELECT].

   (Enter 421 on older Digi-Star EZ3 Indicators.)

2. Press [SELECT] to pick COUNTR (REV on EZ3) option.

3. Press [→].

4. Press [TIMER COUNTER]

5. Enter number of rotations.

6. Press [TIMER COUNTER] rotation counter counts down. Counter reaches zero, alarm light and buzzer on.

7. Press [→] to acknowledge and clear alarm.

To Set Drive Ratio

The Drive Ratio is number of turns seen by sensor divided by number of mixing rotations. For example if 1000 RPM from the Tractor PTO equals 20 RPM of the mixing auger the Drive Ration will be 50.0.

1. Enter **4302** press [SELECT].

   (Enter 422 on older Digi-Star EZ3 Indicators.)

2. Enter drive ratio (in this example 20.25).

3. Press [→].

DEFAULT SETTINGS

SETTING [display]	D.A.N NO.	OPTIONS [displayed] BOLD=DEFAULT	DESCRIPTION
MENU 5. CONTROL SETTINGS			
REMOTE INPUT 1 *RMINP1*	1401 (402)	**TARE**, PRINT, HOLD, NETGRS, M+, ZERO,OFF, PRESET, SWITCH, MIXCTR	Set function of Remote Input line. Change to MIXCTR when utilizing Rotation Counter.
TIMER, COUNTER *TMRCTR*	4301 (421)	**TIMER**, COUNTER	Select Time or Mixer Revolutions to decrement mix TIMER/COUNTER. Change to COUNTER when utilizing Rotation Counter.
DRIVE RATIO *DRATIO*	4302 (422)	**1.0**	Unless directly measuring mixer rotor or auger (1:1), enter the number of input pulses that equal 1 revolution of the rotor or auger. (Example: If 1000 RPM Tractor PTO speed equals 20 RPM of the mixing auger make this setting 50.0)

TESTING THE SYSTEM

1. With power applied to the circuit the Rotation Counter Status LED, as shown in Figure 3, will turn "On" when the Rotation Counter Sensor is aligned with the steel target.

2. Continue to slowly turn the target away from the Sensor. If the sensor LED stays "On", move the Sensor away from other metal objects. The target should light the Sensor Status LED **only** wither when PTO is spinning, or when the target is directly in line with Sensor as shown in Figure 3.

3. Press TIMER/COUNTER.

4. Enter 20 (The number of rotations to count.)

5. Press TIMER/COUNTER

6. Indicator should display 20 REV

7. Engage PTO

8. Watch display to determine if the display counts down from 20.

9. Disengage PTO

10. Press CLEAR

IMPORTANT: Failure to install this system properly could result in Sensor and equipment damage. Please read this document thoroughly before engaging PTO.

IMPORTANT: Failure to keep sensor clear of dirt and debris could result in sensor and equipment damage.

⚠WARNING The installation diagrams show safety shields removed in order to show additional details.   Never operate equipment without safety shields in place. Adding the target to a rotating shaft may require additional shielding and is not provided. Consult your original equipment manufacturer.